

Appln. No. 09/606,878
Amendment Filed With Request for Continued
Examination, dated April 12, 2004

This listing of claims will replace all prior versions, and listing, of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A method of treating a surface of a substrate containing titanium for an ornament, the surface of the substrate having been subjected to a machine working by any of a honing processing step, a nicking processing step and a mirror finishing step and as a result having a substance adhered thereto, the substance being a foreign material, comprising the steps of:

providing the surface containing titanium;

eliminating the substance adhered to said surface of said substrate from said surface; and

forming a transparent protective layer containing glass by the steps of;

selecting a glass coating liquid containing water and having a viscosity that is between 200-500 cps at 25°C ~~when~~for the substrate ~~has been~~ subjected to the honing processing step or the nicking processing step, and that is between 150-250 cps at 25°C ~~when~~for the substrate ~~has been~~ subjected to the mirror finishing step,

applying the glass coating liquid chosen in the selecting step on said surface from which said adhered substance has been eliminated, and

drying said surface.

2-4. (Cancelled).

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5. (Previously Presented) The method of claim 1, wherein said glass coating liquid is dried for about 1 to 20 minutes at a temperature in the range of about 20°C to 250°C.

6. (Previously Presented) The method of claim 1, wherein said glass coating liquid is formed by the steps of:

providing an original liquid and a diluting solvent; and
diluting the original liquid with the diluting solvent.

7. (Previously Presented) The method of claim 1, wherein the step of eliminating the substance adhered to said surface of said substrate includes chemical polishing said surface by immersing said surface in an etching solution.

8. (Original) The method of claim 7, wherein said etching solution comprises hydrofluoric acid, nitric acid and sulfuric acid.

9. (Original) The method of claim 8, wherein said etching solution is an aqueous solution comprising 1% to 10% volume of hydrofluoric acid, 15% to 40% volume of nitric acid and 30% to 60% volume of sulfuric acid.

10. (Original) The method of claim 7, wherein the temperature of said etching solution is in the range of about 30°C to 75°C.

11. (Original) The method of claim 7, wherein said surface is immersed in said etching solution for about 5 to 50 seconds.

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12. (Previously Presented) The method of claim 1, wherein the step of eliminating said adhered substance includes electropolishing said surface with an electrolyte solution.

13. (Original) The method of claim 12, wherein said electrolyte solution contains phosphoric acid.

14. (Original) The method of claim 12, wherein said electropolishing procedure employs an anodic current density in the electrolyte solution of about 0.5 to 10 Amps/cm².

15. (Original) The method of claim 12, wherein said electropolishing step is performed for about 3 seconds to 2 minutes.

16. (Previously Presented) The method of claim 12, wherein the electrolyte solution contains H₃PO₄ in a concentration in the range of about 8% to 12 % volume.

17. (Previously Presented) The method of claim 1, wherein said step of eliminating said adhered substance includes washing said surface.

18. (Previously Presented) The method of claim 1, wherein said substance adhered to said surface of said substrate contain titanium oxides that cause blackening of the surface.

19. (Cancelled).

20. (Previously Presented) The method of claim 6, wherein the step of forming said glass coating liquid includes selecting a dilution ratio corresponding to a selected said

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machine working and diluting said original liquid to a dilution ratio corresponding to said selected machine working applied to said surface.

21. (Previously Presented) The method of claim 20, wherein said glass coating liquid has a viscosity of 150 cps at 25°C or greater and a dilution ratio in the range of about 30% to 70%.

22. (Previously Presented) The method of claim 20, wherein said glass coating liquid has a viscosity in the range of about 150 to 400 cps at 25°C and a dilution ratio in the range of about 50% to 98%.

23. (Previously Presented) The method of claim 1, wherein the step of drying said surface includes drying said surface at least two times under different drying conditions.

24. (Previously Presented) The method of claim 12, wherein a pH of the electrolyte solution is in the range of about 1.0 to 1.2.

25-39. (Cancelled).

40. (Previously Presented) The method of claim 1, wherein said ornament is a part of a timepiece.

41-42. (Cancelled).

43. (Previously Presented) A timepiece containing an ornament made by the method of treating a surface as in claim 1.